

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Progeny LMS, LLC)	
)	WT Docket No. 11-49
Petition for Waiver of the Rules)	
And Request for Expedited Treatment)	

**REPLY COMMENTS OF THE
AMERICAN PETROLEUM INSTITUTE**

The American Petroleum Institute, by its undersigned counsel, hereby submits Reply Comments agreeing with the overwhelming consensus of comments in this proceeding that express serious concern with the results of Progeny LMS, LLC's ("Progeny") San Jose, California field tests of its proposed Multilateration-Location Monitoring Service ("M-LMS") service.¹

The comments in this proceeding are virtually uniform in their opposition to Progeny's request to commence M-LMS service in the 902-928 MHz band on the basis of the tests conducted to date. API agrees that operation of the Progeny M-LMS system will cause unacceptable interference to unlicensed Part 15 devices and urges the Commission not to authorize Progeny to commence operations at this time.

I. BACKGROUND

API is a national trade association representing approximately 500 companies involved in all phases of the petroleum and natural gas industries, including the exploration, production, refining, marketing and transportation of petroleum, petroleum products and natural gas. API's

¹ Public Notice, *The Wireless Telecommunications Bureau and the Office of Engineering and Technology Seek Comment on Progeny's Joint M-LMS Field Testing Reports*, WT Docket No. 11-49 (rel. Nov. 20, 2012) ("Public Notice").

Telecommunications Subcommittee is supported and sustained by companies that operate telecommunications systems in various licensed and license-exempt bands.

API's members make wide use of license-exempt devices in the 902-928 MHz band. In many areas of the United States, unlicensed systems are the only option available to support critical infrastructure applications. In addition, unlicensed equipment is often deployed on the "tail end" of a licensed system, thereby allowing the user to benefit from the flexibility afforded to license-exempt operations under the Commission's Rules, or deployed based on manufacturer decisions to develop equipment under Part 15.

The oil and natural gas industry uses 902-928 MHz band Frequency Hopping Spread Spectrum ("FHSS") equipment primarily to provide medium to low speed (*e.g.*, 9600 baud) serial telemetry in connection with supervisory control and data acquisition ("SCADA") systems. SCADA is used to remotely operate large production fields, sometimes comprised of thousands of oil and/or natural gas wells. Such SCADA systems collect and transmit to a central automation center, critical data regarding well pressures, temperature, and rates of flow that are essential to the coordinated and safe operation of a production facility. SCADA systems are used to transmit alarms in the event of a leak. It is not uncommon for a large oil and natural gas production field to employ several thousand FHSS radios.

SCADA also is used in pipeline and natural gathering systems to support measurement of pipeline pressure and flow rates, detect leaks, and open and close valves. Such functions are critical to safe and efficient operations and to the public health, particularly in the event of a leak. SCADA systems are also used for certain business applications.

In addition to FHSS devices, the energy industry uses Digitally Modulated spread spectrum systems operating in the 902-928 MHz band to operate medium- and high-speed IP

radios for mobile computing. Digitally Modulated license-exempt systems offer a relatively low-cost yet important option for extending worker computing needs into, for example, a production field or throughout a refinery. The Digitally Modulated systems used by energy industry companies often use the very same equipment deployed by Wireless Internet Service Providers (“WISPs”) providing commercial broadband consumer services. As energy industry companies modernize communications around Internet Protocol, Digitally Modulated systems are increasingly becoming integral to the safe and efficient production, transportation and distribution of our nation’s energy resources to the public.

Most recently, there has been a resurgence of interest in deploying RFID devices in the 902-928 MHz band for asset tracking and management applications.

The continued operation of the license-exempt systems by petroleum and natural gas companies and utilities is essential to protecting lives, health and property, both in support of the day-to-day operations of these companies, as well as during responses to emergency incidents.

II. PROGENY HAS NOT MET ITS BURDEN TO DEMONSTRATE THAT ITS PROPOSED SERVICE WILL NOT CAUSE UNACCEPTABLE INTERFERENCE TO PART 15 DEVICES.

API agrees with the overwhelming consensus of commenters in this proceeding that express concerns with Progeny’s proposed M-LMS operations. As Landis+Gyr Company states, there are “millions, if not tens of millions of [Part 15] devices regularly operating efficiently and effectively in admittedly “noisy” consumer, commercial and industrial environments.”² Despite the fact that Part 15 devices are restricted to low power levels and are not protected from interference, the 902-928 MHz band is unquestionably one of the Commission’s great spectrum

² Landis+Gyr Company at 3.

successes, as the scope of the industries submitting comments in this proceeding confirms.

Chairman Genachowski recently testified before the House Committee on Energy and Commerce Subcommittee on Communications and Technology that unlicensed spectrum has a record of creating “*hundreds of billions of dollars of value*” for our economy and consumers.³ It should follow that any proposal to authorize a high power licensed service on top of the 902-928 MHz band should be required to clear a high bar.

Progeny has fallen well short of that mark.

Despite Progeny’s obligation under Section 90.353 of the Commission’s rules to demonstrate that its system will not create unacceptable interference to Part 15 devices, Progeny proposes a system that uses 1) the maximum ERP permitted under the rules (30 watts ERP compared to a maximum of 1-4 watts EIRP for Part 15 devices), 2) an 80-100% duty cycle (despite Progeny’s initial claims that it uses a 10-20% duty cycle to mitigate interference), and 3) a large number of densely deployed transmitters. Indeed, over the past several years Progeny has requested changes to the rules – such as power increases and the elimination of the content of messages transmitted -- to allow it to further encumber the band. In 2011, the FCC granted Progeny a waiver to provide non-vehicular location services without first primarily providing vehicular tracking services. This will further increase the density of Progeny’s deployment.⁴

The results of Progeny’s joint testing with three parties to this proceeding reflects that its proposed system will result in unacceptable interference to Part 15 users.

³ Keeping the New Broadband Spectrum Law on Track, Hearing before the House Committee on Energy and Commerce, Subcommittee on Communications and Technology, 112th Cong. (Dec. 12, 2012) (Testimony of Julius Genachowski, Chairman, Federal Communications Commission).

⁴ The Commission previously specifically disallowed non-vehicular location services to be provided by non-multilateration systems because of concerns that such operations would “cause more intensive use of the sub-band, to the detriment of [...] other users.” Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, Report and Order, PR Docket No. 93-61, 10 FCC Rcd 4695 at para. 24 (1995).

According to the Wireless Internet Service Providers Association, the results of its testing showed that due to the way the 902-928 MHz band is channelized for higher bandwidth devices, Progeny's system effectively precludes use of 60 percent of the band (912-927 MHz) for such applications.⁵ Itron notes that its testing of narrower bandwidth devices reflected that the Progeny system in San Jose significantly degraded communications on the entire 4 MHz of spectrum used by Progeny within the core service area. Moderate degradation was seen well beyond Progeny's core service area. RKF Engineering Solutions notes that beyond the 4 MHz of spectrum directly blocked by Progeny, additional spectrum will also be impacted due to receiver overload.⁶ Further, devices will be squeezed into a smaller portion of already encumbered spectrum, raising the noise floor. The Commission has not defined what constitutes unacceptable interference, but it is hard to envision how a proposal that stands to render large portions of the 902-928 MHz band unusable and create additional congestion in the portions of the band that remain does not meet that definition.

In addition, as UTC states, "[o]nce Progeny is allowed to operate, other M-LMS operators would likely seek to operate at similar power and duty cycles, which would wipe out other parts of the 902-928 MHz band as well." API is extremely concerned about the precedent that the FCC would set by converting a large swath of shared spectrum used by millions, to an exclusive band used by a handful of licensees. To do so would seem to be a 180 degree shift from the Commission's goal of finding new ways to share limited spectrum resources.

Perhaps the most troubling aspect of this proceeding, however, is that it is still not apparent the extent to which the system that Progeny is testing will resemble the system that

⁵ Wireless Internet Service Providers Association Comments at 7.

⁶ RKF Engineering Solutions Comments at 2.

Progeny actually intends to deploy. For example, Itron notes that the “Progeny system observed by Itron in the San Jose testing in July 2012 differed in several ways from the system on which Progeny performed its own testing in December 2011. The Progeny system now is operating at greater signal strength, and according to Progeny staff additional beacons have been added in the San Jose area since last December.”⁷

The reason for this change is unknown, but demonstrates that despite the testing that has occurred, the Commission has no way to know what Progeny’s eventual system will look like because Progeny has not committed to any meaningful conditions for its deployment. In other words, the Commission does not know whether Progeny’s eventual service will entail a denser allocation of sites, higher/lower antenna heights, different antennas, higher power transmitters, in-building repeaters, etc., than what has been tested. Moreover, Progeny holds 228 M-LMS licenses covering 115 Economic Areas (“EAs”). Some of Progeny’s EAs are urban, some suburban, and others rural. Each would appear to require a different configuration for Progeny’s service.

In addition, each EA contains a different mix of Part 15 users. The fact that no site in San Jose is near a pipeline for example, does not mean that the same can necessarily be said for Progeny’s deployment in Houston, Texas. Progeny should be required to demonstrate on a license-by-license basis that its actual system to be deployed will not result in unacceptable interference to Part 15 users. The FCC’s requirement that M-LMS systems “demonstrate through actual field tests that their systems do not cause unacceptable levels of interference” to Part 15 devices is meaningless if construed to mean that a licensee can test a handful of transmitters in a

⁷ Itron Comments at 5.

limited hand-picked area to justify a nationwide deployment of multiple systems that may or may not resemble the facilities tested.

III. CONCLUSION

Consistent with these Reply Comments, and the vast majority of comments in this proceeding, API urges the Commission to find that Progeny has not met its burden of demonstrating that it will not cause unacceptable levels of interference to unlicensed users and not authorize Progeny to commence operations at this time.

Respectfully submitted,

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January 11, 2013